

DRILL HOLES

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PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing Traffic Control Signal with street lighting at the intersection of MD 351 and Ballenger Center Dr. in Frederick County. Exclusive/Permissive left turn signal heads for the MD 351 approaches and Countdown pedestrian signal heads with audible pushbuttons shall be installed at this location. MD 351 is assumed to run a north-south direction.

II. INTERSECTION OPERATION

- The intersection is to operate in a NEMA five-phase, fully-actuated mode, with the MD 351 approaches continuing to run concurrently. Exclusive/Permissive left turn phases shall now be provided for both approaches of MD 351. A new Countdown pedestrian phase with audible pushbuttons shall be placed on recall across Ballenger Center Dr. The Ballenger Center Dr approach shall continue to run in its own phase.
- The existing full-traffic-actuated, eight-phase controller with all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be utilized at this intersection. SHA signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to the SHA Signal Shop for testing and programming.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- All controller cabinet wiring will be performed by the S.H.A. Signal Shop. Contact Mr. Ed Rodenhizer at (410) 787-7650 seventy-two hours in advance of intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

The contact persons for District #7 are as follows:

Mr. John Concannon
Assistant District Engineer - Traffic
Phone: (310) 624-8141

Mr. Ray Johnson
Assistant District Engineer - Maintenance
Phone: (310) 624-8106

Ms. Andrea Abend
District Engineer - Utility
Phone: (301) 624-8110

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7670

EQUIPMENT LIST

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
8008	Audible/tactile pedestrian pushbutton station & signs.	2 EA
8009	Breakaway pedestal pole (10')	2 EA
8014	LED 16" countdown pedestrian signal heads.	2 EA
8022	Remove and dispose of existing material & equipment per assignment.	1 EA
8032	Disconnect, pull back and reroute cable.	620 L.F.
8035	Schedule 80 rigid PVC conduit up tp 4" - trenched.	235 L.F.
8036	Schedule 80 rigid PVC conduit up tp 4" - bored.	105 L.F.
8038	Detectable warning surfaces	16 S.F.
8039	Install overhead or ground mounted sign.	22.5 SF
8041	No. 6 AWG stranded bare copper ground wire.	175 L.F.
8047	Furnish and install electrical handhole.	3 EA
8054	Electrical cable - 2 conductor (No. 14 AWG).	215 L.F.
8056	Electrical cable - 5 conductor (No. 14 AWG).	220 L.F.
8057	Electrical cable - 7 conductor (No. 14 AWG).	925 L.F.

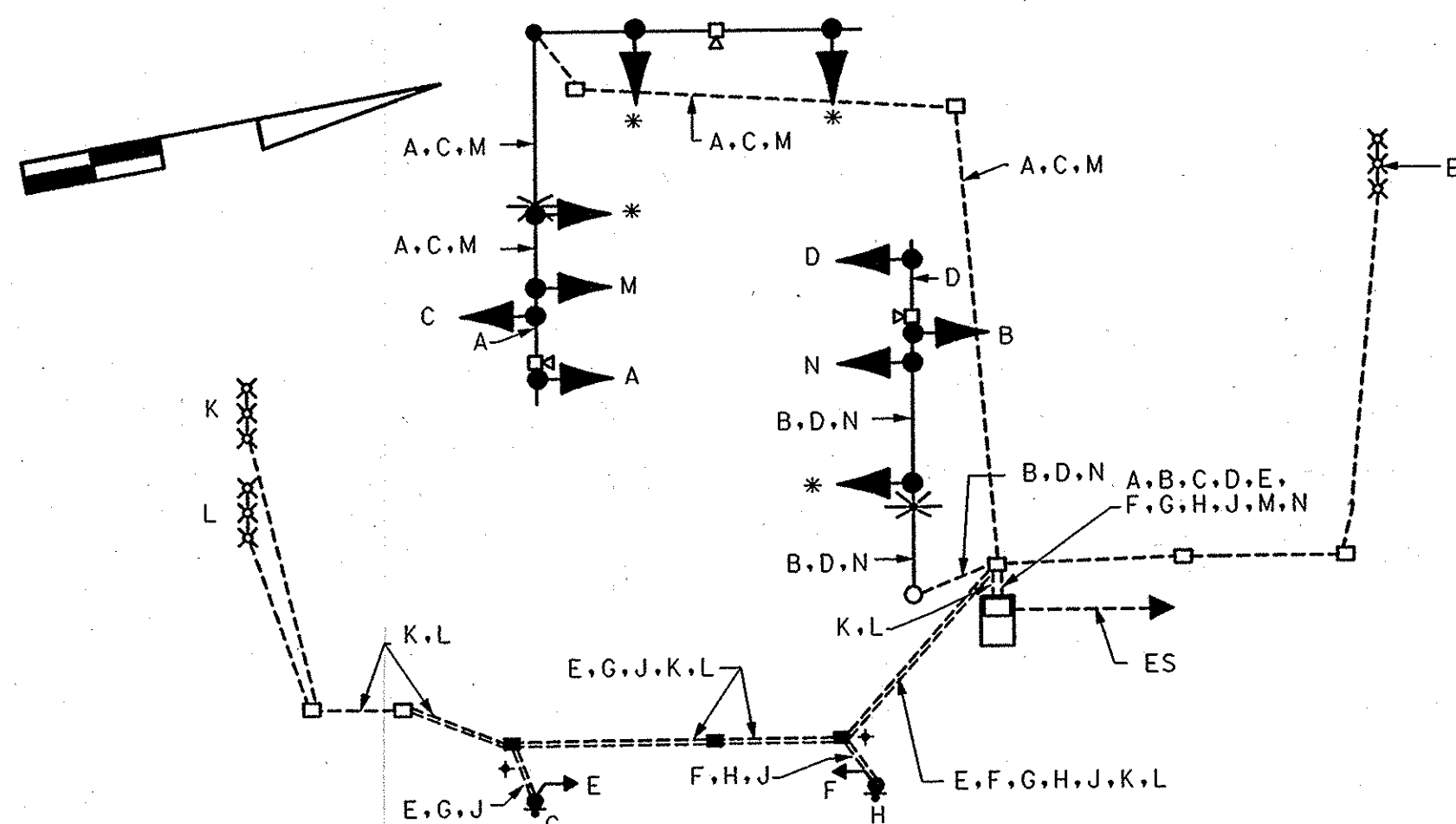
C. EQUIPMENT TO BE REMOVED

All other removed signal materials are to become property of the contractor.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12
	←G→	←G→	R	R	←G→	←G→	R	R	R	R	DW	DW
PHASE 1 & 5	←G→	←G→	R	R	←G→	←G→	R	R	R	R	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6	←G→	←G→	G	G	←R→	←R→	R	R	R	R	WK	WK
PHASE 1 & 6	←G→	←G→	G	G	←R→	←R→	R	R	R	R	WK	WK
1 & 6 CHANGE	←Y→	←Y→	G	G	←R→	←R→	R	R	R	R	WK	WK
PHASE 2 & 5	←R→	←R→	R	R	←G→	←G→	G	G	R	R	DW	DW
2 & 5 CHANGE	←R→	←R→	R	R	←Y→	←Y→	G	G	R	R	DW	DW
PHASE 2 & 6	FL/←R→	FL/←R→	G	G	FL/←R→	FL/←R→	G	G	R	R	WK	WK
PED CLEAR / COUNTDOWN	FL/←R→	FL/←R→	G	G	FL/←R→	FL/←R→	G	G	R	R	FL/DW	FL/DW
2 & 6 CHANGE	←R→	←R→	Y	Y	←R→	←R→	Y	Y	R	R	DW	DW
PHASE 4	←R→	←R→	R	R	←R→	←R→	R	R	G	G	DW	DW
4 CHANGE	←R→	←R→	R	R	←R→	←R→	R	R	Y	Y	DW	DW
FLASHING OPERATION	FL/←R→	FL/←R→	FL/Y	FL/Y	FL/←R→	FL/←R→	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK

WIRING DIAGRAM



WIRING KEY	
A	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
E	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
G	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
J	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
K	EXISTING MICROLOOP CABLE
EM	EXISTING MICROLOOP UNAFFECTED BY PROJECT
ES	EXISTING UNDERGROUND SERVICE TO BE MAINTAINED ALLEGHANY POWER
*	USE EXISTING CABLE
+	GROUND ROD

EQUIPMENT LIST

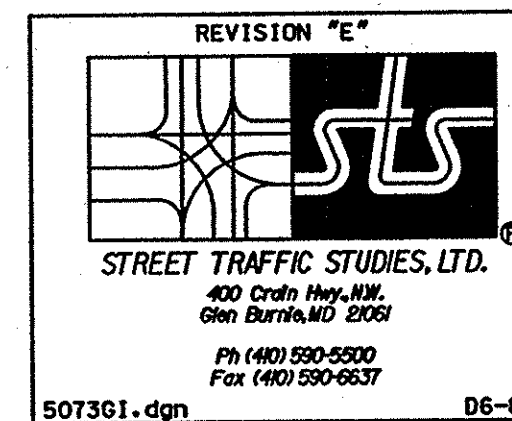
A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

ITEM NO.	DESCRIPTION	QUANTITY
9571	Sheet aluminum signs to consist of: (mast arm or pole mount) R10-12(4) "LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP" sign, (36"x42") mast arm mount R10-3E MOD "PUSH BUTTON TO CROSS BALLENGER CENTER DR" sign (9" x 12") pole mount	22.5 SF 2 EA 2 EA

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	2 EA
2001	Class 2 Excavation.	8 C.Y.
2002	Test Pit Excavation	2 C.Y.
5002	Removal of existing permanent pavement line markings	145 L.F.
5004	12" white heat applied permanent preformed thermoplastic pavement marking.	175 L.F.
5005	24" white heat applied permanent preformed thermoplastic pavement marking.	90 L.F.
6001	Standard type A combination curb and gutter 12" gutter pan 8" depth.	115 L.F.
6002	4" concrete sidewalk.	595 S.F.
8001	12" LED signal head section.	30 EA
8002	2 wire Central Control unit	1 EA

TOD No.: AT783-12
SHA No.:FR558A55



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PLOTTED: 8/24/2006 10:00:00
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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 351 AND
BALLENGER CENTER DR

GENERAL INFORMATION SHEET

SCALE NONE DATE 7-3-06 CONTRACT NO. AT7835185

DESIGNED BY J ALLEN COUNTY FREDERICK
DRAWN BY R. C. LOGMILE 100351004.53
CHECKED BY TMS NO. H619
F.A.P. NO. TOD NO.

TS NO. 3905E DRAWING NO. 2 OF 2 SHEET NO. OF